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|   |             |                      |                              |                  |
|---|-------------|----------------------|------------------------------|------------------|
| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
| 10/697,909  | 10/30/2003  | Jongmo Sung          | 51876P397                    | 9718             |
| 8791 7590 04/30/2007<br>BLAKELY SOKOLOFF TAYLOR & ZAFMAN<br>12400 WILSHIRE BOULEVARD<br>SEVENTH FLOOR<br>LOS ANGELES, CA 90025-1030 |             |                      | EXAMINER<br>KOVACEK, DAVID M |                  |
|   |             |                      | ART UNIT                     | PAPER NUMBER     |
|   |             |                      | 2609                         |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE  |             | MAIL DATE            | DELIVERY MODE                |                  |
| 3 MONTHS  |             | 04/30/2007           | PAPER                        |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/697,909

Applicant(s)

SUNG ET AL.

Examiner

David Kovacek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 2 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/17/2005, 10/30/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because in Figure 8, item 818 contains a spelling error. The item is labeled "ONVERT..." and should read, "CONVERT..." instead. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the

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brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

- Page 4, Lines 9-10 (under "Description of the Prior Art") read, "Thus narrowband speech network and wideband speech network may co-exist in the near future." It is the examiner's belief that "network" in both instances should be changed to "networks."
- Page 4, line 13 (under "Description of the Prior Art") references "bit steam." It is the examiner's belief that this should be changed to "bit stream."
- Page 8, paragraph 4 (under "Detailed description of the Preferred Embodiments") reads, "translates a formant parameters." The direct object of 'translates' should be in either singular or plural form. The examiner suggests maintaining plural form throughout.

Appropriate correction is required.

***Claim Objections***

4. Claim 2 is objected to because of the following informalities: page 23, line 25 should read "a [forth] fourth type converting means."

Appropriate correction is required.

5. Claim 6 is objected to because of the following informalities:

Claim 6 lacks antecedent basis for "the formant frame rate converting means" used in describing the "fifth type converting means." For purposes of examination, it is assumed that this refers to the formant frame rate converting means described in claim 2 and that claim 6 was meant to be dependent from claim 2, where this limitation is first cited.

Additionally, claim 6 is unclear in "generating the each formant filter coefficient sets." For purposes of examination, it is assumed that the claim was intended to read, "generating each of the formant filter sets."

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,260,009, hereinafter referred to as Dejaco.

Regarding **claim 1**, Dejaco teaches an apparatus for trans-coding between code excited linear prediction (CELP) type including:

- a formant parameter translator for translating formant parameters from an input CELP format to an output CELP format (Fig. 5, item 502; fig. 7, item 702; col. 6, lines 55-57; col. 7, lines 16-19; col. 2, lines 45-49);
- a formant parameter quantizer for receiving the translated formant parameters and quantizing the translated formant parameters (Fig. 5, item 506; col. 6, lines 60-62; fig. 7, item 712; col. 8, lines 15-17);
- an excitation parameter translator for translating excitation parameters from input CELP format to output CELP format and generating excitation parameters in an output CELP format (Fig. 6, item 630; col. 2, lines 49-53; col. 6, lines 4-8); and
- an excitation quantizer for receiving the translated excitation parameters and quantizing the translated excitation parameters (Fig. 5, item 506; col. 6, lines 60-62).

Regarding **claim 8**, Dejaco teaches a method for trans-coding between CELP type codecs, comprising:

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- translating formant parameters from input CELP format to output CELP format (Fig. 5, item 502; fig. 7, item 702; col. 6, lines 55-57; col. 7, lines 16-19);
- quantizing the translated formant parameters (Fig. 5, item 506; col. 6, lines 60-62; fig. 7, item 712; col. 8, lines 15-17);
- translating excitation parameters from input CELP format to output CELP format (Fig. 5, item 504; col. 7, lines 6-8); and
- quantizing the translated excitation parameters. (Fig. 5, item 506; col. 6, lines 60-62).

Regarding **claim 9**, this claim has limitations similar to claim 8 and is rejected for the same reasons.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dejacco as applied to claim 1 above, and in view of US Patent Application 2003/0028643 A1, hereinafter referred to as Jabri.

Regarding **claim 2**, Dejacó teaches, in addition to everything as applied above, all limitations (Fig. 6, item 620 and enclosed items; col. 7, line 11 – col. 8, line 17) except a means of formant bandwidth translation.

Jabri teaches a transcoder capable of detecting the bandwidth capabilities of its input and output bitstreams and appropriately converting the input bitstream bandwidth to accommodate the output bitstream bandwidth (Page 5, paragraph 0061).

Jabri provides motivation in disclosing the need for this type of transcoding when transferring data between one or more networks that require different formats for bandwidth purposes (Page 2, paragraphs 0011-0012).

Therefore, the examiner contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Dejacó using the teachings of Jabri in order to allow transcoding of CELP type codecs between networks requiring different.

Regarding **claim 3**, Jabri additionally teaches a transcoder capable of controlling bitstream for the purposes of bandwidth compression (Page 4, paragraph 0053). It is further taught that an embodiment of the invention is capable of bi-directional operation (Page 5, paragraph 0065; Fig. 5), which inherently requires the converse functionality for controlling bitstream bandwidth for the purposes of bandwidth expansion.



Regarding **claim 4**, Dejaco additionally teaches an embodiment of the disclosed invention that includes a model order converter using truncation and extension of coefficients (Col. 7, lines 30-41).

Regarding **claim 5**, Dejaco additionally teaches an embodiment of the disclosed invention that includes an interpolator and decimator for adjusting frame rates (Col. 7, line 63 – col. 8, line 8).

8. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dejaco in view of US Patent 5371853, hereinafter referred to as Kao, and further in view of Jabri.

Regarding **claim 6**, Dejaco teaches an excitation parameter translator that includes an excitation synthesizing means (Fig. 6, item 606; col. 8, lines 25-31), a codebook searcher (Fig. 6, item 608; col. 7, lines 7-8; col. 8, lines 32-34).

However, Dejaco does not disclose a separation of adaptive and fixed codebooks, a perceptual weighting filter before the codebook searching means, nor the excitation bandwidth converting means.

Koa discloses a CELP vocoder that includes both an adaptive and fixed codebook (Fig. 4; col. 5, lines 42-59), and also perceptual weighting filters before codebook searching (Fig. 4, items 66, 68; col. 5, line 68 – col. 6, line 9).

However, this combination does not disclose an excitation parameter translator that includes an excitation bandwidth converting means.

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Jabri teaches a transcoder capable of detecting the bandwidth capabilities of its input and output bitstreams and appropriately converting the input bitstream bandwidth to accommodate the output bitstream bandwidth (Page 5, paragraph 0061).

Koa provides motivation by disclosing the need for reduced complexity of processing the excitation parameters of a CELP-type codec (Col. 3, lines 42-45).

Jabri provides motivation in disclosing the need for this type of transcoding when transferring data between one or more networks that require different formats for bandwidth purposes (Page 2, paragraphs 0011-0012).

Therefore, the examiner contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Dejaco using the teachings of Koa and Jabri in order to allow transcoding of CELP type codecs with reduced complexity in processing excitation parameters between networks requiring different bandwidths.

Regarding **claim 7**, Jabri teaches a transcoder capable of detecting the bandwidth capabilities of its input and output bitstreams and appropriately converting the input bitstream bandwidth to accommodate the output bitstream bandwidth (Page 5, paragraph 0061).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-2, 4-6, and 8-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over one or more of claims 1-3, 9, 11, 13, 15, 18 and/or 28 of copending Application No. 2004/0111257. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claims 1-2, 4-6, and 8-9** of the current application cover the same material of one or more of claims 1-3, 9, 11, 13, 15, 18 and/or 28 of Application No. 2004/0111257. In every instance throughout this action, "general understanding" refers to the understanding to

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one of ordinary skill in the art. An example of direct comparison is shown below

for claim 1:

| Current Application Language  | 2004/011257 Language   | Basis for Provisional Rejection   |
|---|--|---|
| 1. An apparatus for trans-coding between code excited linear prediction (CELP) type codecs having different bandwidths, comprising:   | 1. A transcoding apparatus between code-excited linear prediction (CELP)-based codecs using bandwidth extension, the apparatus comprising:   | "Bandwidth extension" is one of a plurality of methods of converting between "different bandwidths" as encompassed by the current application's claim.  |
| a formant parameter translating means for translating formant parameters from input CELP format to output CELP format and generating formant parameters in an output CELP format;   | a formant parameter converter which extracts formant parameters from an input narrowband bitstream, and converts the extracted formant parameters into formant parameters in an output wideband CELP format;   | <p>"Converter" is generally understood to be synonymous with "translating means" in this context.</p> <p>The current application makes the distinction in the preamble that the input and output CELP codecs are distinguished by different bandwidths, which includes the condition of narrow- to wide-band conversion.</p>                            |
| a formant parameter quantizing means for receiving the translated formant parameters and quantizing the translated formant parameters;<br>...<br>and an excitation quantizing means for receiving the translated excitation parameters and quantizing the translated excitation parameters. | and a quantizer which quantizes the wideband CELP format formant parameters converted in the formant parameter converter and the wideband CELP format excitation signal parameter converted in the excitation signal parameter converter, respectively in an output CELP format. | <p>The current application's language addresses all limitations of the quantizing portions of the apparatus described in 2004/011257.</p> <p>It is understood from the language of the preamble in the current application that the quantizing means described in the current apparatus will provide outputs in the appropriate output CELP format.</p> |
| an excitation parameter translating means for translating excitation parameters from input CELP format to output CELP format and generating excitation parameters in an output CELP format;   | an excitation signal parameter converter which converts excitation signal parameters from an input narrowband bitstream, into excitation signal parameters in an output wideband CELP format;  | <p>"Converter" is generally understood to be synonymous with "translating means" in this context.</p> <p>The current application additionally makes the distinction in the preamble that the input and output CELP codecs are distinguished by different bandwidths, which includes the condition of narrow- to wide-band conversion.</p>               |

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Krueger et al. (US Patent 6,308,222) discloses a method and apparatus for the transcoding of audio data using a proxy server between a computer device and the Internet.

- Jabri et al. (US Patent 6,829,579) discloses a method of transcoding between CELP-based speech codecs that accounts for differences in frame size, sub-frame size, and sampling rate between the input and output codecs.

- Moni et al. (US Patent 6,950,463) discloses a method and apparatus for video transcoding that allows for bitrate adjustment in real time.

- Zinser et al. (US Patent Application 2003/0050775) discloses an apparatus and method of transcoding between TDVC-type and MELP-type codecs.

- Zinser et al. (US Patent Application 2003/0105628) discloses an apparatus and method of transcoding between LPC-type and TDVC-type codecs.

- Jabri et al. (US Patent Application 2004/0172402) discloses a method and apparatus for mapping of CELP parameters between two CELP-type codec bitstreams.

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- Nomura et al. ("A Bitrate and Bandwidth Scalable CELP Coder", 1998 IEEE) discloses a method of implementing a CELP Coder that provides for bitrate scalability and bandwidth extension.
- Dong et al. ("SNR and Bandwidth Scalable Speech Coding", 2002 IEEE) discloses a method of implementing a CELP Bandwidth Scalable Coder.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Kovacek whose telephone number is (571) 270-3135. The examiner can normally be reached on M-F 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on (571) 272-7687. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

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Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Alexander Eisen', with a stylized flourish at the end.

Alexander Eisen

SPE

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DMK, 04/25/2007